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Bouncing back with bliss: nurturing body image and embracing intuitive eating in the postpartum: a cross-sectional replication study

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ABSTRACT

Aims/Background: Social pressure to 'bounce back' and unrealistic body expectations place postpartum women at risk of body image dissatisfaction, depressive symptomology, and disordered eating. Prior research suggests that intuitive eating may reduce these risks. This study replicated a previous 2016 study between intuitive eating, postpartum depression, disordered eating, and body image satisfaction.

Design/Method: Women over 18 who had given birth in the last four years were recruited through social media to complete an online survey. The final sample comprised 163 women aged between 21 and 42 years ($M = 33.61$, $SD = 4.59$) who were between one and 208 weeks postpartum ($M = 78.27$, $SD = 53.40$).

Results: Correlation analyses revealed significant negative associations between intuitive eating and body dissatisfaction, disordered eating, depression, and BMI. A hierarchical multiple linear regression demonstrated that body image dissatisfaction significantly predicted 29% of the variance in intuitive eating scores after controlling for BMI, disordered eating, and postpartum depression $F(4, 133) = 68.71$, $p < .001$. Body image dissatisfaction fully mediated the relationships between intuitive eating and disordered eating ($c' = -0.01$, $p = .359$), and depression ($c' = 0.01$, $p = .427$). There was a significant reduction in body dissatisfaction scores in the present sample compared to the 2016 cohort $t(292.87) = 3.38$, $p < .001$.

Conclusion: These findings highlight the central role of body image and intuitive eating in postpartum wellbeing and emphasise the need for tailored interventions promoting realistic postpartum body expectations and adaptive eating behaviours.

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Mothers; disordered eating; eating attitudes; depression; psychological wellbeing

Many women in developed countries report high levels of weight and body dissatisfaction (Fiske et al., 2014; Matthiasdottir et al., 2012). While most research concerning body image and weight-related preoccupations focus on young women (Kilpela et al., 2015), body image dissatisfaction is evident in women across all phases of life (Quittkat et al., 2019).

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Pregnancy is one such life phase, characterised by significant body shape and weight changes. While motherhood narratives provide pregnant women with some relief from the pressure to be thin, social acceptance of weight gain is rarely maintained after birth. Social norms place pressure on postpartum women to return to pre-pregnancy shape and size almost immediately after birth (Clark et al., 2009; Coker et al., 2013; M. F. Lee et al., 2023).

The cognitive disconnect between societal beauty standards and what is realistic for a postpartum body contributes to increased mental distress during a period that is already recognised as challenging for mental health, contributing to the elevated prevalence of postpartum depression, impacting one in seven new mothers (Mughal et al., 2022). The bodily changes experienced in pregnancy and postpartum can trigger disordered eating behaviours in as many as one in nine postpartum women (M. F. Lee et al., 2020). Mothers with poor body image are less likely to breastfeed, or exercise (Raspovic et al., 2021) and are more likely to experience a decrease in sexual function (M. F. Lee et al., 2023).

Researchers, medical professionals, and other stakeholders vary in their definitions of the duration of the postpartum period. The Australian Institute of Health and Welfare (2023) defines the postpartum period as the first six weeks after birth. In medicine, the postpartum period is defined as the first 12 weeks after childbirth, during which most of the predominant physical impacts associated with pregnancy subside (McKinney et al., 2018). In research, the term ‘postpartum’ has been used to describe any amount of time after the birth of a child (Foster et al., 2023). Studies have shown that maternal mental health issues like depression and anxiety can persist or even worsen up to 4–5 years after childbirth (Bryson et al., 2021; Woolhouse et al., 2015). Consistent with M. F. Lee et al. (2020), the present study defines the postpartum period as the first four years following childbirth to capture the extended impact of new motherhood on eating attitudes, body image and mental health.

Body image is an individual’s mental evaluation of their physical shape and appearance (Gjerdingen et al., 2009). Poor body image, or body image dissatisfaction, describes a state in which an individual holds a low evaluation of their body irrespective of its true form. For women, this low opinion of their body is often extrapolated to other domains of self-evaluation, damaging self-esteem, and life satisfaction (Davis et al., 2020; Virk & Singh, 2020). While weight gain and changes in body shape are anticipated during pregnancy, many women have unrealistic expectations of their bodies postpartum (Hodgkinson et al., 2014). Women who previously held positive appraisals of their body’s pre-pregnancy can experience decreases in body image satisfaction postpartum that continue for several years (M. Lee & Damhorst, 2021), increasing their risk of developing disordered eating behaviours (Knoph et al., 2013; Pettersson et al., 2016). In qualitative studies, postpartum women have expressed that the desire to return to their previous body shape and weight is the single largest motivating factor for dieting and food restriction, which can lead to disordered eating (Hodgkinson et al., 2014; M. Lee & Damhorst, 2021).

Cognitive distortions, common in depression, exacerbate poor self-perception and amplify poor body image, while bodily rumination perpetuates depressive thought patterns (Hartley et al., 2021). Even women who have never exhibited disordered eating behaviours before face increased risk of these negative and distorted thought patterns during the first six months after giving birth (Rodgers et al., 2018). This heightened susceptibility to disordered eating is triggered by rapid body changes experienced in pregnancy and the societal expectation to return to pre-pregnancy size (Pettersson et al., 2016). However, research into the efficacy of dieting and disordered eating behaviour has shown that any weight loss achieved through these methods is largely unsustainable (Lowe et al., 2013; Pélissier et al., 2023).

Intuitive eating is an approach that decentres weight and shape concerns. A mindfulness-based technique, it removes weight-focused thinking and food pre-occupation (Van Dyke & Drinkwater, 2014). Intuitive eating is not the absence of disordered eating but the presence of adaptive, positive eating attitudes that encompass (i) the freedom to eat without restriction on timing or food choice, (ii) the choice of food based on physical hunger rather than emotional triggers, (iii) dependence on natural hunger and fullness cues to determine when to stop eating and (iv) making food choices that optimise the functioning and wellbeing of the body (Tylka, 2006). Intuitive eating can significantly improve psychological wellbeing and decrease disordered eating habits (Schaefer & Magnuson, 2014). Women who follow intuitive eating styles report higher body image satisfaction and lower levels of weight-focused preoccupation (Bruce & Ricciardelli, 2016).

There is limited understanding of the effects of adopting intuitive eating styles in the postpartum; however, existing studies indicate potential benefits. Leahy et al. (2017) found women who ate intuitively lost more weight 12–18 months postpartum than those who did not. Our previous cross-sectional study of 419 postpartum women recruited in 2016 investigated the relationship between eating habits, body image and psychological wellbeing concluding that eating intuitively in the postpartum period was associated with higher body image satisfaction and decreased depressive symptomology (M. F. Lee et al., 2020). We found that most new mothers did not follow intuitive eating styles (68%) and recommended that more resources be given to new mothers to educate them about intuitive eating and how it may benefit their wellbeing.

Since our initial study was published, several studies have emerged supporting and expanding upon our findings (Hartley et al., 2021; Koller et al., 2020; Raspovic et al., 2021). These studies support the connection between postpartum body image dissatisfaction and decreased wellbeing, others (Gillen et al., 2021; Yager et al., 2022) have shown that breastfeeding and motherhood identities are protective factors against disordered eating. Given body image dissatisfaction arises from socially constructed ideals (Sæle et al., 2021), changing social contexts may influence body image ideals to fluctuate over time (Bonafini & Pozzilli, 2011).

Karazsia et al. (2017) conducted a cross-temporal meta-analysis that found an increase in body satisfaction between 2002 and 2016 and proposed the rapid rise of body-positive media and increased visibility of diverse body types as a possible explanation. Early research on the impact of social media use showed detrimental effects on body image and eating attitudes – however, more contemporary studies have considered the difference in content presented by the growing body-positive community (Sanzari et al., 2023). Body-positive social media content aims to challenge unrealistic beauty standards by presenting subjects as they are, with diverse body types, skin colours and abilities (Stevens & Griffiths, 2020). Women who view body-positive images report lower levels of body dissatisfaction and larger ideal body sizes than women who do not (Owen & Spencer, 2013). Body-positive media also increases body appreciation, a protective factor against the detrimental impact of thin-idealised media (Andrew et al., 2015; Halliwell, 2013). As body-positive content, both online and offline, has increased significantly in recent years (Sanzari et al., 2023), body image among women in the same changing social context (mainly Western) may have changed since initial data collection in 2016 (M. F. Lee et al., 2020. It might be that postpartum women today have an increased appreciation of the functionality of their bodies, particularly in relation to producing and sustaining children, than postpartum women seven years earlier.

The current study aims to replicate the data collection and analysis in M. F. Lee et al. (2020) to investigate the relationships between intuitive eating, disordered eating, depression, and body image satisfaction in postpartum women. We investigate how these relationships may have changed since 2016. We hypothesise that:

H1: Higher intuitive eating scores will be negatively associated with disordered eating, postpartum depression, and body image dissatisfaction.

H2: Body image dissatisfaction will significantly predict intuitive eating after controlling for demographic and lifestyle predictors.

H3: Body image dissatisfaction will be lower in the present sample than in M. F. Lee et al. (2020)

Materials and methods

The research design followed the STROBE-nut framework (Lachat et al., 2016). Ethics approval was granted by the Bond University Human Research Ethics Committee prior to data collection (ML02015). Please refer to M. F. Lee et al. (2020) for full details of the replicated methods, particularly the sociodemographic and pre-validated scales.

Participants

Women aged 18 and older who had given birth in the last four years were invited to participate in an online survey hosted through Qualtrics. Participants were recruited through researcher personal networks, email, and snowball sampling on social media platforms, including Facebook, X, Instagram, and LinkedIn.

Table 1 demonstrates the participant characteristics of the study. The final sample comprised 163 women aged between 21 and 42 years ($M_{age} = 33.61$, $SD = 4.59$), between one and 208 weeks (four years) postpartum ($M_{weeks} = 78.27$, $SD = 53.40$). Most participants were Australian (88%), lived in suburban environments (57%), were partnered (93%), had more than one child (52%), had completed tertiary education (70%), were employed part or full-time (63%), and earned between \$600 and \$2000 AUD a week (51%). A GPower analysis for Hierarchical Multiple Linear Regression (HMLR) with a moderate effect ($f^2 = 0.15$ $\alpha = .05$, $\beta = .96$) indicated the sample size of 163 was well-powered (Faul et al., 2007).

Table 1. Participant characteristics (N = 163).

	n	M	SD
Age (years)	120	33.61	4.59
Child Age (weeks)	162	78.27	53.40
BMI[a]	156	25.85	5.35
IES-28[b]	163	3.22	0.64
BSQ-16A[c]	163	46.52	16.11
EAT-26[d]	157	8.25	8.29
EPDS[e]	153	9.55	5.94
	n		%
Location	144		88
Australia/New Zealand			
United States	15		9
United Kingdom	4		2
Residential Area	93		57
Suburban			
Urban	37		23
Rural	33		20
Relationship Status	151		93
Partnered			
Unpartnered	12		7
Weekly Household Income	76		47
Over $2000			
Between $600 and $2000	83		51
Under $600	4		3
Highest Education Level	49		30
High School/TAFE			
Undergraduate	66		41
Postgraduate	48		29
Employment Status	49		30
Homemaker			
Student	11		7
Part-time	54		33
Full-time	49		30
Number of Children	79		49
One			
Two	60		37
Three	19		12
Four or More	5		3
Check Social Media			
Every Hour	33		20
Every Day	120		74
Every Second Day	4		3
Every Few Days	1		1
Favourite Social Media Platform			
Facebook	38		23
X	2		1
Instagram	104		64
LinkedIn	1		1
TikTok	8		5
Snapchat	1		1
YouTube	4		3
Number of Mumfluencers Followed			
None	46		28
One	9		6
Two	25		16
Three	12		8
Four or More	67		41
Open-Ended Questions			
What it is about 'Mumfluencers' that make you feel this way about your body?	93		
What is your favourite thing about being a Mum?	135		
What is your least favourite thing about being a Mum?	135		
Please tell us how you felt about your body image before the pregnancy of your first child.	134		

(*Continued*)

Table 1. (Continued).

	n
Please tell us how you feel about your body image now.	135
Do you think social media has a good or bad influence on your body image?	134
How do you think your attitude towards food has changed since the birth of your child/children	133
How do you think your mental health has changed since the birth of your child/children	135
Is there anything else you would like to share about your body image, eating attitudes, and mental health as the mother of a young child?	85

[a]BMI = Body Mass Index, [b]IES-28 = Intuitive Eating Scale, [c]BSQ= Body Shape Questionnaire, [d]EAT-26 = Eating Attitudes Test, [e]EPDS = Edinburgh Postnatal Depression Scale.

Procedure

The survey link directed participants to an information sheet and informed consent. Consenting participants were directed to sociodemographic questions see M. F. Lee et al. (2020). Participants were then directed to complete the Intuitive Eating Scale (IES-28; α = .84), Eating Attitudes Test (EAT-26; α = .70), Body Shape Questionnaire (BSQ-16A; α = .94), and Edinburgh Postnatal Depression Scale (EPDS; α = .89). Additional Likert style and open-ended questions focused on social media use and the impact on postpartum body image were also included and are reported in the supplementary material.

Results

Data collection concluded in December 2023 with 252 respondents. An *a priori* decision was made to remove participants who did not complete the BSQ-16A (predictor) or IES-28 (outcome) scales ($n = 87$). Two were excluded for child's age exceeding the criterion (>4 years). Mean imputation was used for missing responses in IES ($n = 7$), BSQ ($n = 1$), EAT26 ($n = 18$), EPDS ($n = 2$). Missing data did not exceed 5%. After excluding eight multivariate outliers using Mahalanobis distance χ^2 for df = 4 (at α = .001) of 18.47, no other HMLR assumption violations were observed.

Pearson's correlation for continuous predictors and Spearman's correlation for categorical variables were conducted and revealed significant negative correlations between IES-28 and BSQ-16A - $r(161) = -.80$, $p < .001$, EAT-26 - $r(155) = -.50$, $p < .001$, EPDS - $r(151) = -.30$, $p < .001$, and BMI - $r(154) = -.42$, $p < .001$. These variables were then included in the HMLR (Table 2).

Significant predictors were entered into a three-step model with IES-28 as the outcome. BMI was entered alone in the first step of the model. EPDS scores and EAT-26 were entered together in the second step. To determine the unique variance contributed by body image dissatisfaction after controlling for other significant predictors, BSQ-16A was entered alone into the final step of the model.

The overall model predicting IES-28 scores from BMI, EAT-26, EPDS and BSQ-16A scores was significant, $F(4, 133) = 68.71$, $p < .001$. In step one of the HMLR, BMI significantly accounted for 19% of the variance in IES-28 scores, adj$R^2 = .19$, $F(1, 136) = 32.49$, $p < .001$. In step two, EAT-26 and EPDS accounted for an additional a further 19% of the variance in IES-28 scores, adj$R^2 = .37$, $\Delta F(2, 134) = 21.22$, $p < .001$. In step three, BSQ-16A significantly accounted for an additional 29% of variance in IES-28 scores, adj$R^2 = .66$, $\Delta F(1,133) = 117.02$,

Table 2. Correlation coefficients for predictors and outcome variable.

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. IES-28[a]	–											
2. BSQ-16A[b]	–.80**	–										
3. EAT-26[c]	–.50**	.57**	–									
4. EPDS[d]	–.30**	.47**	.36**	–								
5. Age	–.10	.10	–.03	–.08	–							
6. BMI[e]	–.42**	.31**	.17*	.08	.04	–						
7. Location[rs]	.10	–.22*	–.08	–.08	.01	–.15	–					
8. Residential area[rs]	.07	–.09	–.06	–.05	–.05	.16	.-.01	–				
9. Relationship[rs]	–.05	.08	–.12	.10	–.03	.06	–.17	.01	–			
10. Income[rs]	–.04	–.01	–.01	.06	.14	–.06	.07	–.05	.14	–		
11. Education[rs]	.09	–.20**	–.10	–.09	.18	–.01	.26**	–.08	–.25**	.12	–	
12. Employment[rs]	–.17*	.11	.18*	.05	.03	–.05	.28**	–.04	–.08	–.19*	.15	–
13. Children[rs]	–.11	.12	.01	.10	.38**	–.05	.01	.12	–.05	.10	–.21*	–.18*

**$p < .001$, *$p < .05$. [a]IES-28 = Intuitive Eating Scale, [b]BSQ-16A = Body Shape Questionnaire, [c]EAT-26 = Eating Attitudes Test, [d]EPDS = Edinburgh Postnatal Depression Scale, [e]BMI = Body Mass Index, [rs]Spearman's correlations.

Table 3. Hierarchical multiple linear regression with unstandardised (B) and standardised (b) Coefficients (n = 163).

		95% CI for *B*						
Model	*B*	LL	UL	SE *B*	b	sr^2	$AdjR^2$	DR^2
Step 1							.19**	.19**
Constant	4.78**	4.25	5.31	0.27				
BMI[a]	−0.06**	−0.80	−0.04	0.01	0.44**	0.19		
Step 2							.37**	.19**
Constant	4.90**	4.42	5.38	0.24				
BMI[a]	−0.05**	−0.06	−0.03	0.01	−0.34**	0.11		
EAT26[b]	−0.04**	−0.06	−0.03	0.01	−0.36**	0.11		
EPDS[c]	−0.02	−0.04	0.01	0.01	−0.18**	0.03		
Step 3							.67**	.29**
Constant	5.26**	4.90	5.61	0.18				
BMI[a]	−0.03**	−0.04	−0.01	0.01	−0.20**	0.04		
EAT26 [b]	−0.01	−0.02	0.01	0.01	−0.03	0.01		
EPDS[c]	0.01	0.01	0.02	0.01	0.07	0.01		
BSQ-16A[d]	−0.03**	−0.02	−0.02	0.01	−0.75**	0.29		

**$p < .001$, CI = Confidence Intervals. [a]BMI = Body Mass Index, [b]EAT-26 = Eating Attitudes Test, [c]EPDS = Edinburgh Postnatal Depression Scale, [d]BSQ-16A = Body Shape Questionnaire.

$p < .001$. Together, the four predictor variables explained 66% of the variance in IES-28. In the final step, EAT-26 ($b = –0.03$, $p = .652$) and EPDS ($b = 0.07$, $p = .261$) no longer significantly predicted IES-28. Table 3 presents semi-partial correlations, unstandardised and standardised betas for predictors at each step of the model. Table 3 presents semi-partial correlations, unstandardised and standardised betas for predictors at each step of the model.

Post-hoc mediation analyses were performed using PROCESS to determine if BSQ-16A mediated the relationships between EAT-26 and IES-28 (Figure 1) and EPDS and IES-28 (Figure 2). The analyses utilised a heteroscedasticity-consistent approach (HC3) with bootstrapping of 95% confidence intervals (5000 samples) to mitigate potential bias. The first mediation of BSQ-16A between EAT-26 and IES-28 accounted for significant unique variance in IES-28, $R^2 = .63$, $F(2,\ 146) = 101.91$, $p < .001$. The standardised indirect effect of EAT-26 through BSQ-16A was significant, $ab = –0.44$, 95% CI [–0.55, –0.35]. BSQ-16A fully mediated the relationship between EAT-26 and IES-28, $c' = –0.01$, $p = .359$.

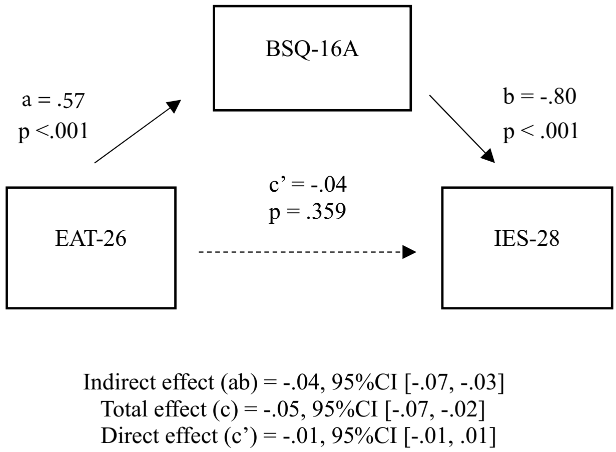

Figure 1. Standardised regression coefficients for mediation of EAT-26 and IES-28 by BSQ-16A.Note. CI = Confidence Intervals. IES-28 = Intuitive Eating Scale, EAT-26 = Eating Attitudes Test, BSQ-16A = Body Shape Questionnaire.

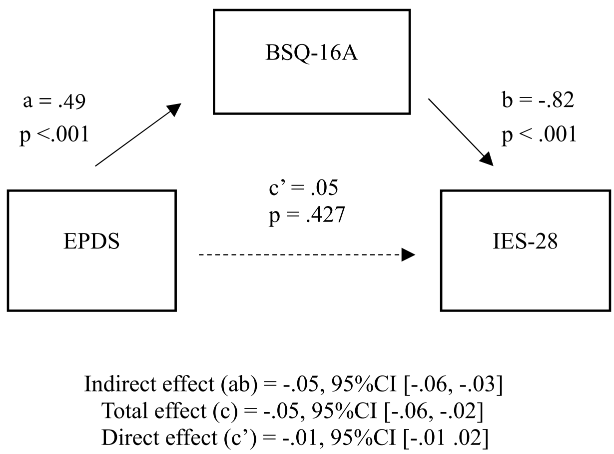

Figure 2. Standardised regression coefficients for mediation of EPDS and IES-28 by BSQ-16A.Note. CI = Confidence Intervals. IES-28 = Intuitive Eating Scale, EAT-26 = Eating Attitudes Test, BSQ-16A = Body Shape Questionnaire.

Unstandardised (*B*) regression coefficients, 95% confidence intervals and values for the mediation model are displayed in Table 4.

The second mediation of BSQ-16A between EPDS and IES-28 accounted for significant unique variance in IES-28, $R^2 = .63$, $F(2, 142) = 103.64$, $p < .001$. The standardised indirect effect of EPDS through BSQ-16A was significant, $ab = -0.40$, 95%
CI [−0.52, −0.27]. BSQ-16A fully mediated the relationship between EPDS and IES-28, $c' = 0.01$, $p = .427$.

Unstandardised (*B*) regression coefficients, 95% confidence intervals and values for the mediation model are displayed in Table 5.

Table 4. Mediation model coefficients for EAT-26, BSQ and IES-28.

Variable	*B* [95% CI]
DV = BSQ[a] (R^2 = .33)**	36.04 [30.68, 41.39]
Constant	
EAT-26[b]	1.39 [0.59, 2.19]
DV = IES-28[c] (R^2 = .63)**	4.69 [4.48, 4.89]
Constant	
EAT-26 [b]	−0.01 [−0.01, 0.01]
BSQ[a]	−0.03 [−0.04, −0.03]

**p < .001, CI = Confidence Intervals. [a]BSQ = Body Shape Questionnaire, [b]EAT-26 = Eating Attitudes Test, [c]IES-28 = Intuitive Eating Scale.

Table 5. Mediation model coefficients for EPDS, BSQ and IES-28.

Variable	*B* [95% CI]
DV = BSQ[a] (R^2 = .24)**	32.53 [27.93, 37.13]
Constant	
EPDS[b]	1.43 [0.94, 1.91]
DV = IES-28[c] (R^2 = .63)**	4.68 [4.47, 4.89]
Constant	
EPDS [b]	−0.01 [−0.01, 0.02]
BSQ[a]	−0.03 [−0.04, −0.03]

**p < .001, CI = Confidence Intervals. [a]BSQ = Body Shape Questionnaire, [b]EPDS = Edinburgh Postnatal Depression Scale, [c]IES-28 = Intuitive Eating Scale.

An independent samples t-test was used to assess differences in BSQ-16A between the 2016 (n = 419) and 2023 (n = 163) samples. Levene's test for equality of variances was significant (p = .001), therefore, Welch's t-test was reported. Participants in the 2016 sample reported significantly higher body dissatisfaction (M = 50.69, SD = 18.60) than the 2023 sample, (M = 45.33, SD = 15.61), t(292.87) = 3.38, p < .001.

Discussion

This study aimed to replicate and investigate the relationships between intuitive eating, disordered eating, depression, and body image satisfaction in postpartum women. As predicted, body image dissatisfaction, postpartum depression and disordered eating were negatively correlated with intuitive eating scores among the current sample. The moderate association found between intuitive and disordered eating indicates a non-perfect correlation, lending support to the assertion that intuitive eating is distinct from the absence of disordered eating in the postpartum (M. F. Lee et al., 2022; Tylka, 2006). These findings imply that instructing new mothers to avoid disordered eating may be inadequate for a comprehensive understanding of intuitive eating as a positive and distinct dietary approach to avoid body image dissatisfaction.

As hypothesised, after controlling for demographic and lifestyle variables, body image dissatisfaction remained a significant predictor of intuitive eating. This is consistent with previous studies that have emphasised the role of self-perception and body rumination in the development of dieting behaviour (Coker et al., 2013; M. Lee & Damhorst, 2021). It also suggests that women who hold positive or neutral appraisals of their bodies may be more likely to adopt intuitive eating styles.

Full mediations of body image dissatisfaction between postpartum depression, disordered eating and intuitive eating suggest that body image may be central to multiple threats to wellbeing facing women in the postpartum. Suggesting that women who internalise societal beauty standards may equate the inability to revert to their pre-pregnancy physique with a loss of identity, further exacerbating the loss sometimes already associated with the transition to motherhood (Hodgkinson et al., 2014). Froreich et al. (2017) note that diminished self-efficacy and autonomy can act as triggers for disordered eating; engaging in body rumination and dieting behaviours emerges as a means through which women seek to assert a semblance of control amid a period marked by significant changes (Martini et al., 2021). The findings of this study indicate that body image is an important component of postpartum psychological wellbeing, further underscoring the need for interventions specifically aimed at realistic body expectations. Despite the study population scoring well below the clinical cut-off for depression, indicating relatively good mental health, body image still emerged as a significant factor impacting postpartum psychological wellbeing. This suggests that even among mentally well postpartum women, addressing body image concerns could further enhance their overall psychological state.

These findings also suggest that education or intervention delivered to pregnant or postpartum women regarding intuitive eating may include strategies to protect and improve body image perception. Women who have low body image satisfaction are less likely to adopt intuitive eating styles, putting them at risk of adopting disordered eating behaviours. Of particular concern is the perpetuation of such attitudes across generations. Daughters of women who engage in diet behaviours and negative self-talk are more likely to develop poor body image and disordered eating (Arroyo & Andersen, 2016; Byely et al., 2000; Handford et al., 2018). Conversely, mothers who model positive body image can help their daughters build resilience to body dissatisfaction and disordered eating (Maor & Cwikel, 2016).

The level of body dissatisfaction found in the current sample was lower than that found in our 2016 data collection (M. F. Lee et al., 2020). This supports our third hypothesis, that changing social landscapes and the body-positivity movement may be influencing body image dissatisfaction levels in the postpartum in a positive way. Although positive social media influences were not a focused hypothesis in this study, we further expand on these findings in an additional manuscript currently under review. Multiple factors may be contributing to this outcome rather than solely the changing social landscapes. The current sample exhibited, higher levels of education and income compared to the 2016 sample, lower levels of postnatal depression, along with lower average BMIs. In Western countries, BMIs tend to be lower among the rich and highly educated (Anekwe et al., 2020). While no negative correlations were found between BMI and education or income level, the sample may not be truly reflective of the diversity of postpartum women in Western populations.

While the present study replicated the recruitment methodology of M. F. Lee et al. (2020), social media algorithms have changed dramatically in the intervening years, resulting in fewer opportunities to promote surveys beyond the researchers' immediate social networks (Darko et al., 2022). The sociodemographic difference between this sample and that of M. F. Lee et al. (2020) is perhaps due to this sampling method; resulting in a non-representative sample (Parker et al., 2019). Subsequent research may benefit from stratified sampling methods to ensure that women from lower socioeconomic backgrounds are represented, especially as these women are the most vulnerable to poor health outcomes in the postpartum and least likely to have access to sufficient mental health resources (Corrigan et al., 2015).

Conclusion

This study indicates a complex interaction between intuitive eating, body image, postpartum depression, and disordered eating, wherein each factor influences the others. As postpartum women are at particular risk of poor body image and its associated negative effects on wellbeing, resources are needed to help new mothers adapt not only to the lifestyle changes associated with motherhood, but also the physical changes. Intuitive eating is a dietary approach that may benefit new mothers and help mitigate mental ill health, but the effectiveness of any dietary intervention depends upon the incorporation of positive and realistic expectations of the postpartum body. The factors that enable positive body image in the postpartum period require further exploration.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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References

Andrew, R., Tiggemann, M., & Clark, L. (2015). The protective role of body appreciation against media-induced body dissatisfaction. *Body Image*, *15*, 98–104. https://doi.org/10.1016/j.bodyim.2015.07.005

Anekwe, C. V., Jarrell, A. R., Townsend, M. J., Gaudier, G. I., Hiserodt, J. M., & Cody Stanford, F. (2020). Socioeconomics of obesity. *Current Obesity Reports*, *9*(3), 272–279. https://doi.org/10.1007/s13679-020-00398-7

Arroyo, A., & Andersen, K. K. (2016). Appearance-related communication and body image outcomes: Fat talk and old talk among mothers and daughters. *The Journal of Family Communication*, *16*(2), 95–110. https://doi.org/10.1080/15267431.2016.1144604

Australian Institute of Health and Welfare. (2023). *Maternity models of care in Australia 2023 glossary*. https://www.aihw.gov.au/reports/mothers-babies/maternity-models-ofcare/contents/glossary

Bonafini, B. A., & Pozzilli, P. (2011). Body weight and beauty: The changing face of the ideal female body weight. *Obesity Reviews*, *12*(1), 62–65. https://doi.org/10.1111/j.1467-789X.2010.00754.x

Bruce, L. J., & Ricciardelli, L. A. (2016). A systematic review of the psychosocial correlates of intuitive eating among adult women. *Appetite*, *96*, 454–472. https://doi.org/10.1016/j.appet.2015.10.012

Bryson, H., Perlen, S., Price, A., Mensah, F., Gold, L., Dakin, P., & Goldfeld, S. (2021). Patterns of maternal depression, anxiety, and stress symptoms from pregnancy to 5 years postpartum in an Australian cohort experiencing adversity. *Archives of Women's Mental Health*, *24*(6), 987–997. https://doi.org/10.1007/s00737-021-01145-0

Byely, L., Archibald, A. B., Graber, J., & Brooks-Gunn, J. (2000). A prospective study of familial and social influences on girls' body image and dieting. *International Journal of Eating Disorder*, *28*(2), 155–164. https://doi.org/10.1002/1098-108X(200009)28:2<155:AID-EAT4>3.0.CO;2-K

Clark, A., Skouteris, H., Wertheim, E. H., Paxton, S. J., & Milgrom, J. (2009). The relationship between depression and body dissatisfaction across pregnancy and the postpartum: A prospective study. *Journal of Health Psychology*, *14*(1), 27–35. https://doi.org/10.1177/1359105308097940

Coker, E. L., Mitchell-Wong, L. A., & Abraham, S. F. (2013). Is pregnancy a trigger for recovery from an eating disorder? *Acta Obstetricia Et Gynecologica Scandinavica*, *92*(12), 1407–1413. https://doi.org/10.1111/aogs.12256

Corrigan, C. P., Kwasky, A. N., & Groh, C. J. (2015). Social support, postpartum depression, and professional assistance: A survey of mothers in the midwestern United States. *The Journal of Perinatal Education*, *24*(1), 48–60. https://doi.org/10.1891/1058-1243.24.1.48

Darko, E. M., Kleib, M., & Olson, J. (2022). Social media use for research participant recruitment: Integrative literature review. *Journal of Medical Internet Research*, *24*(8), e38015. https://doi.org/10.2196/38015

Davis, L., Fowler, S., Best, L., & Both, L. (2020). The role of body image in the prediction of life satisfaction and flourishing in men and women. *Journal of Happiness Studies*, *21*(2), 505–524. https://doi.org/10.1007/s10902-019-00093-y

Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, *39*(2), 175–191.

Fiske, L., Fallon, E. A., Blissmer, B., & Redding, C. A. (2014). Prevalence of body dissatisfaction among United States adults: Review and recommendations for future research. *Eating Behaviors*, *15*(3), 357–365. https://doi.org/10.1016/j.eatbeh.2014.04.010

Foster, S. F., Vazquez, C., Cubbin, C., Nichols, A. R., Rickman, R. R., & Widen, E. M. (2023). Breastfeeding, socioeconomic status, and long-term postpartum weight retention. *International Breastfeeding Journal*, *18*(1), 1. https://doi.org/10.1186/s13006-022-00534-0

Froreich, F. V., Vartanian, L. R., Zawadzki, M. J., Grisham, J. R., & Touyz, S. W. (2017). Psychological need satisfaction, control, and disordered eating. *British Journal of Clinical Psychology*, *56*(1), 53–68. https://doi.org/10.1111/bjc.12120

Gillen, M. M., Markey, C. H., Rosenbaum, D. L., & Dunaev, J. L. (2021). Breastfeeding, body image, and weight control behavior among postpartum women. *Body Image*, *38*, 201–209. https://doi.org/10.1016/j.bodyim.2021.04.006

Gjerdingen, D., Fontaine, P., Crow, S., McGovern, P., Center, B., & Miner, M. (2009). Predictors of mothers' postpartum body dissatisfaction. *Women & Health*, *49*(6–7), 491–504.

Halliwell, E. (2013). The impact of thin idealized media images on body satisfaction: Does body appreciation protect women from negative effects? *Body Image*, *10*(4), 509–514. https://doi.org/10.1016/j.bodyim.2013.07.004

Handford, C. M., Rapee, R. M., & Fardouly, J. (2018). The influence of maternal modeling on body image concerns and eating disturbances in preadolescent girls. *Behaviour Research and Therapy*, *100*, 17–23. https://doi.org/10.1016/j.brat.2017.11.001

Hartley, E., Fuller-Tyszkiewicz, M., Skouteris, H., & Hill, B. (2021). A qualitative insight into the relationship between postpartum depression and body image. *Journal of Reproductive and Infant Psychology*, *39*(3), 288–300. https://doi.org/10.1080/02646838.2019.1710119

Hodgkinson, E. L., Smith, D. M., & Wittkowski, A. (2014). Women's experiences of their pregnancy and postpartum body image: A systematic review and meta-synthesis. *BMC Pregnancy and Childbirth*, *14*(1), 330. https://doi.org/10.1186/1471-2393-14-330

Karazsia, B. T., Murnen, S. K., & Tylka, T. L. (2017). Is body dissatisfaction changing across time? A cross-temporal meta-analysis. *Psychological Bulletin*, *143*(3), 293–320. https://doi.org/10.1037/bul0000081

Kilpela, L. S., Becker, C. B., Wesley, N., & Stewart, T. (2015). Body image in adult women: Moving beyond the younger years. *Advances in Eating Disorders*, *3*(2), 144–164. https://doi.org/10.1080/21662630.2015.1012728

Knoph, C., Holle, A. V., Zerwas, S., Torgersen, L., Tambs, K., Stoltenberg, C., Bulik, C. M., & Reichborn-Kjennerud, T. (2013). Course and predictors of maternal eating disorders in the postpartum period. *The International Journal of Eating Disorders*, *46*(4), 355–368. https://doi.org/10.1002/eat.22088

Koller, K. A., Thompson, K. A., Miller, A. J., Walsh, E. C., & Bardone-Cone, A. M. (2020). Body appreciation and intuitive eating in eating disorder recovery. *The International Journal of Eating Disorders*, *53*(8), 1261–1269. https://doi.org/10.1002/eat.23238

Lachat, C., Hawwash, D., Ocké, M. C., Berg, C., Forsum, E., Hörnell, A., Larsson, C., Sonestedt, E., Wirfält, E., Åkesson, A., Kolsteren, P., Byrnes, G., De Keyzer, W., Van Camp, J., Cade, J. E., Slimani, N., Cevallos, M., Egger, M., & Huybrechts, I. (2016). Strengthening the reporting of observational studies in epidemiology—nutritional epidemiology (STROBE-nut): An extension of the STROBE statement. *PLOS Medicine*, *13*(6), e1002036.

Leahy, K., Berlin, K. S., Banks, G. G., & Bachman, J. (2017). The relationship between intuitive eating and postpartum weight loss. *Maternal and Child Health Journal*, *21*(8), 1591–1597. https://doi.org/10.1007/s10995-017-2281-4

Lee, M. F., Bolton, K., Madsen, J., & Burke, K. J. (2023). A systematic review of influences and outcomes of body image in postpartum via a socioecological framework. *Journal of Reproductive and Infant Psychology*, 1–38. https://doi.org/10.1080/02646838.2023.2252453

Lee, M., & Damhorst, M. L. (2021). Women's body image throughout the adult life span: A living history approach. *Journal of Women & Aging*, *34*(6), 810–827. https://doi.org/10.1080/08952841.2021.2015197

Lee, M. F., Madsen, J., Williams, S. L., Browne, M., & Burke, K. (2022). Differential effects of intuitive and disordered eating on physical and psychological outcomes for women with young children. *Maternal and Child Health Journal*, *26*(2), 407–414. https://doi.org/10.1007/s10995-021-03251-y

Lee, M. F., Williams, S. L., & Burke, K. J. (2020). Striving for the thin ideal post-pregnancy: A cross-sectional study of intuitive eating in postpartum women. *Journal of Reproductive and Infant Psychology*, *38*(2), 127–138. https://doi.org/10.1080/02646838.2019.1607968

Lowe, M., Doshi, S., Katterman, S., & Feig, E. (2013). Dieting and restrained eating as prospective predictors of weight gain. *Frontiers in Psychology*, *4*. https://doi.org/10.3389/fpsyg.2013.00577

Maor, M., & Cwikel, J. (2016). Mothers' strategies to strengthen their daughters' body image. *Feminism & Psychology*, *26*(1), 11–29. https://doi.org/10.1177/0959353515592899

Martini, M., Marzola, E., Brustolin, A., & Abbate-Daga, G. (2021). Feeling imperfect and imperfectly feeling: A network analysis on perfectionism, interoceptive sensibility, and eating symptomatology in anorexia nervosa. *European Eating Disorders Review*, *29*(6), 893–909. https://doi.org/10.1002/erv.2863

Matthiasdottir, E., Jonsson, S. H., & Kristjansson, A. L. (2012). Body weight dissatisfaction in the Icelandic adult population: A normative discontent? *European Journal of Public Health*, *22*(1), 116–121. https://doi.org/10.1093/eurpub/ckq178

McKinney, J., Keyser, L., Clinton, S., & Pagliano, C. (2018). Optimizing postpartum care. *Obstetrics & Gynecology*, *132*(3), 784–785. https://doi.org/10.1097/AOG.0000000000002849

Mughal, S., Azhar, Y., & Siddiqui, W. (2022). *Postpartum depression*. StatPearls Publishing. http://www.ncbi.nlm.nih.gov/books/NBK519070/

Owen, R., & Spencer, R. M. C. (2013). Body ideals in women after viewing images of typical and healthy weight models. *Body Image*, *10*(4), 489–494. https://doi.org/10.1016/j.bodyim.2013.04.005

Parker, C., Scott, S., & Geddes, A. (2019). *Snowball sampling*. SAGE Research Methods Foundations. http://methods.sagepub.com/foundations/snowball-sampling

Pélissier, L., Bagot, S., Miles-Chan, J. L., Pereira, B., Boirie, Y., Duclos, M., Dulloo, A., Isacco, L., & Thivel, D. (2023). Is dieting a risk for higher weight gain in normal-weight individual? A systematic review and meta-analysis. *The British Journal of Nutrition*, *130*(7), 1190–1212. https://doi.org/10.1017/S0007114523000132

Pettersson, C., Zandian, M., & Clinton, D. (2016). Eating disorder symptoms pre- and postpartum. *Archives of Women's Mental Health*, *19*(4), 675–680. https://doi.org/10.1007/s00737-016-0619-3

Quittkat, H. L., Hartmann, A. S., Düsing, R., Buhlmann, U., & Vocks, S. (2019). Body dissatisfaction, importance of appearance, and body appreciation in men and women over the lifespan. *Frontiers in Psychiatry*, *10*, 864. https://doi.org/10.3389/fpsyt.2019.00864

Raspovic, A. M., Prichard, I., Yager, Z., & Hart, L. M. (2021). Mothers' experiences of the relationship between body image and exercise, 0–5 years postpartum: A qualitative study. *Body Image*, *35*, 41–52. https://doi.org/10.1016/j.bodyim.2020.08.003

Rodgers, R. F., O'Flynn, J. L., Bourdeau, A., & Zimmerman, E. (2018). A biopsychosocial model of body image, disordered eating, and breastfeeding among postpartum women. *Appetite*, *126*, 163–168. https://doi.org/10.1016/j.appet.2018.04.007

Sæle, O. O., Sæther, I. K., & Viig, N. G. (2021). The ideal body: A social construct? Reflections on body pressure and body ideal among students in upper secondary school. *Frontiers in Sports and Active Living*, *3*. https://doi.org/10.3389/fspor.2021.727502

Sanzari, C. M., Gorrell, S., Anderson, L. M., Reilly, E. E., Niemiec, M. A., Orloff, N. C., Anderson, D. A., & Hormes, J. M. (2023). The impact of social media use on body image and disordered eating behaviors: Content matters more than duration of exposure. *Eating Behaviors*, *49*, 101722. https://doi.org/10.1016/j.eatbeh.2023.101722

Schaefer, J. T., & Magnuson, A. B. (2014). A review of interventions that promote eating by internal cues. *Journal of the Academy of Nutrition and Dietetics*, *114*(5), 734–760. https://doi.org/10.1016/j.jand.2013.12.024

Stevens, A., & Griffiths, S. (2020). Body positivity (#BoPo) in everyday life: An ecological momentary assessment study showing potential benefits to individuals' body image and emotional well-being. *Body Image*, *35*, 181–191. https://doi.org/10.1016/j.bodyim.2020.09.003

Tylka, T. L. (2006). Development and psychometric evaluation of a measure of intuitive eating. *Journal of Counseling Psychology*, *53*(2), 226–240. https://doi.org/10.1037/0022-0167.53.2.226

Van Dyke, N., & Drinkwater, E. J. (2014). Relationships between intuitive eating and health indicators: Literature review. *Public Health Nutrition*, *17*(8), 1757–1766. https://doi.org/10.1017/S1368980013002139

Virk, A., & Singh, P. (2020). A study on relationship between body-image and self-esteem among medical undergraduate students. *International Journal of Community Medicine and Public Health*, *7*(2), 636. https://doi.org/10.18203/2394-6040.ijcmph20200441

Woolhouse, H., Gartland, D., Mensah, F., & Brown, S. (2015). Maternal depression from early pregnancy to 4 years postpartum in a prospective pregnancy cohort study: Implications for primary health care. *BJOG: An International Journal of Obstetrics & Gynaecology*, *122*(3), 312–321. https://doi.org/10.1111/1471-0528.12837

Yager, Z., Prichard, I., Hart, L., & Damiano, S. R. (2022). Mumbod? A comparison of body image and dietary restraint among women with younger, older, and no children. *Journal of Health Psychology*, *27*(4), 778–789. https://doi.org/10.1177/1359105320967422